TRAILER LOCK

Field of the Invention

The present invention relates to a trailer lock structure. More particularly, it can provide the connection of the trailers or carrying goods, and also achieve an anti-theft purpose of the trailer lock.

Background of the Invention

According to the conventional trailer lock 1, the structure mainly comprises a rocket bolt 11, and a lock body 12 as shown in Figure 1. The rocket bolt 1 is set in the connection base of the end of the car for providing an inter-link in small trailers. By the trailer lock 1, it can be against of the theft in small trailers. However, these small trailers can only provide the space for some camping facilities, foods, beverages, and etc. While carrying with bigger carrying goods, such as bicycles, it cannot be against of theft for carrying goods or bicycles caused of only one function in the interlink according to the conventional trailer design. This leads to reduce the efficiency of the anti-theft. Therefore, the present invention can overcome the shortage and provide a better improvement.

Summary of the Invention

The present invention relates to a trailer lock, which comprises a rocket bolt, a lock body, and a chain couple. The inner side of the fixed end in the rocket bolt and one of the lock bodies individually has a mounting segment for matching a chain couple with a two-end mounting part and its connection. By the winch design of the chain, it can winch the carrying goods such as bicycle of the supporting base in the end of the car for achieving anti-theft purpose on

carrying goods.

The main object of the present invention is to provide a trailer lock structure. More particularly, it meets the user's requirements for matching the connection with a chain couple as well as the basic function of the trailer lock. By using the winch design of the chain couple for carrying goods such as a bicycle, it can achieve the anti-theft purpose on the carrying goods.

Brief Description of the Drawings

Figure 1 is a prior art of the trailer lock showing a 3-D disassembly graph;

Figure 2 is one of the preferred embodiments according to the present invention showing a 3-D disassembly graph;

Figure 3 is one of the preferred embodiments according to the present invention showing a 3-D assembly graph;

Figure 4 is another preferred embodiment according to the present invention showing a 3-D assembly graph;

Figure 5 is a cross-sectional graph according to the present invention;

Figure 6 is one of the preferred embodiments according to the present invention showing an operational status;

Figure 7 is another preferred embodiment according to the present invention showing an operational status;

Figure 8 is another preferred embodiment according to the present invention showing a 3-D disassembly graph; and

Figure 9 is a cross-sectional graph according to the present invention showing the combination between the main body of the chain couple and the both ends of the mounting parts.

Detailed Description of the Preferred Embodiments

The forgoing and other objects, features and advantages of the present invention will be better understood from the following description taken in connection with the accompanying drawings, in which:

Please referring to Figures 2, 3, 4, and 5, the trailer lock 2 of the present invention mainly comprises a rocket bolt 21, a lock body 22, and a chain couple 23, which:

The rocket bolt 21 is the main body 210 of a long bar. One end of the rocket bolt has a fixed end 211 with a longer dimension, and the other end of the rocked bolt has a locking bolt 212. The inner of the fixed end 211 positioning in the intersection of the fixed end and the main body 210 has a mounting segment 213. The mounting segment 213 can be an outer screw segment. More, one side neighboring to a locking bolt in the main body 210 has a hollow hole 214 for the elastic pin 26 to pin-in.

The inner of one end in the lock body 221 has a lock 221, and the other end has a mounting segment 222. The lock 221 can provide the locking bolt 21 of a rocket bolt 212 for an interlock thereto control the lock and un-lock. More, the outer rim of the lock body has a ring drain 223 for mounting with an anti-dust cover 25 and a mounting ring 252. Also, the mounting of the cover 251 can protect the lock 221 thereto achieve the purpose of an anti-theft or a waterproof.

The both ends of the chain couple 23 fixing with a mounting part by a block 233 as shown in Figure 9. The mounting part 23 is a ring with an inner mounting hole 232. The mounting hole can be an inner screw hole for providing the interlock of the mounting segment 213, and 222 between the rocket bolt 21 and the lock body 22 thereto achieves a better positioning of the

matching efficiency. Further, the main body 230 of the chain couple 23 can be a chain 230' with the function of winching goods as shown in Figure 8.

By the assembly of the above description components, the connection base 31 in the end of the car 3 provides a supporting 4 base with a trailer lock 2 for the bicycles 5 while carrying the larger goods such as bikes, please referring to Figure 5 and Figure 6. If using the conventional trailer lock 1 herein, it only can prevent the supporting base from theft. This cannot achieve the anti-theft for bikes 5. The present invention can winch the bike 5 on the trailer lock 2 thereto an anti-theft purpose. One end of the couple part 231 in the chain couple mounts to the mounting segment 213 of the rocket bolt 21. Then, the rocket bolt is pinned into the bolt hole 311 of the connection base 31. More, the elastic pin 26 is pinned into the hollow hole 214 of the rocket bolt 21 as a position thereto anti-slide of the rocket bolt 21. Further, one of the mounting parts 231 in the chain couple 23 winches the carrying goods such as bikes, and then, the mounting segment 222 of the lock body 22 mounts into the mounting hole 232 of the mounting part 231. Then, the lock body 22 and the rocket bolt 21 are pinned-in to lock. This makes the trailer rock has a winch design of the chain couple besides to the original functions for an anti-theft in carrying goods.

While only using trailer 6 for carrying in the connection, it does not require the coupling part 231 of the chain couple 23 to mount with the rocket bolt 21 and the lock body 22. The cover 24 can individually mount with mounting segments 222 and 213 of the lock body 22 and the rocket bolt 21. The cover 24 can be a cover body 241 with the inner screw hole 241. This, therefore, can achieve the purpose of a better matching ability with decoration as shown in Figure 4 and Figure 7.

According to the above description, the present invention can overcome the shortage of the conventional trailer lock, and provide a trailer lock with multiple functions. This can have a complete anti-theft function. As a result, it has an obvious improvement, and can legally apply to the patent.